

Synopsis of the DASYLLIDÆ of the United States.

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Since the publication of the synopsis of a portion of this family by Dr. Leconte, (Proc. Acad. 1853, pp. 350—357), no attention had been given it until the appearance of the "Classification" (pp. 177—182), in which the genera only are considered. This may be accounted for by the very uninteresting nature of the greater number of the smaller forms and the difficulty in determining the precise limits of species.

It has been more especially the object of the present essay to deal with the species, the genera being already sufficiently well defined in the books. The systematic arrangement of the tribes and genera here adopted, is practically that proposed by Dr. Leconte with some minor differences in the tables, having for their object either the introduction of new genera or for the illustration of certain lines of affinity which are mentioned in their proper places.

The characters of the family have already been fully made known in general works and it is not necessary to repeat them here. It is necessary to add to the generalities the presence of bifid claws in the tribe Eubriini and the presence of membranous appendages to the claws of *Placonycha*.

That there exists a very close relationship between this family and the Rhipiceridæ must be admitted, the only character which seems to separate them is found in the prominent middle coxæ of the Rhipiceridæ, and if we admit the genus *Brachypsectra* Lec. (Trans. Am. Ent. Soc. 1874, p. 55), this character also fails as neither the anterior nor middle coxæ are prominent, nor is there an anterior trochantin as in all Rhipiceridæ. This need not concern us here as a further study of the genus will place it nearer the true Elateridæ.

The absence of an onychium is by no means constant in the present family and that organ is as well developed in *Stenocolus* Lec. (Lichas Westw.), as in the majority of Rhipiceridæ. The form of the head and especially that of the mandibles in *Stenocolus*, *Dasyllus* and *Anorus*, strikingly resemble those of *Sandalus*, etc.

While the affinities of the genera in one portion of the family are in one direction there is a certain resemblance shown between the

Eubriini and the Parinidæ in the form of the tarsi. This affinity would be rendered still more striking were the observations of Mr. Crotch confirmed, that the larva of *Placonycha Edwardsii* resembles that of *Helichus* or of *Psephenus*.

In another direction there seems to be a relationship existing between the Macropogonini and *Cerophytum*, an aberrant Elateride.

The Dascyllidæ of the Basin of Lemane have been made a study by Henri Tournier, (Association Zoologique du Lemane, Année 1867, Geneva 1868), the result being an extremely acceptable pamphlet in which the descriptions are all that could be desired and the plates very clearly drawn. A resumé of the more recent papers on the family is given and an arrangement of the genera adopted not differing essentially from that proposed by Lacordaire.

The family may be divided into two sub-families, which seem to be as natural as they are convenient for the study of the subordinate groups, in the following manner :

Anterior coxæ with large trochantin.....DASCYLLIDÆ.
Anterior coxæ without trochantin.....HELODIDÆ.

Sub-Family I.—DASCYLLIDÆ.

The anterior coxæ are transverse, rarely more prominent than the prosternal process which moderately separates them. The trochantin is large and very distinct. The mandibles are always more evident than in the second sub-family. The tibiæ are never bicarinate externally and the spurs comparatively small. The claws are simple or feebly dilated at base, pectinate in *Odontonyx*.

Two tribes are formed by the genera in our fauna distinguished in the following manner :

Epistoma prolonged, concealing the labrum in great part and the mandibles, posterior coxæ narrowly separated.....MACROPOGONINI.
Epistoma short, labrum and mandibles visible, posterior coxæ contiguous, rarely slightly separated.....DASCYLLINI.

The trochanters of the anterior and middle legs are elongate in the first tribe, short in the second.

Tribe I.—*Macropogonini*.

Head free, slightly deflexed, received in the thorax as far as the eyes, clypeal suture obliterated, front slightly prolonged in great part concealing the labrum and mandibles in repose. Prosternum moderately separating the coxæ, usually meeting the mesosternum, the anterior coxæ oval not more prominent than the prosternum and with large trochantin. Mesosternum separating the coxæ, horizontal or

oblique (*Allopon*). Metasternal epimera concealed. Posterior coxæ very narrow and feebly dilated within, slightly separated at middle. Trochanters of anterior and middle legs moderately long. Onychium wanting.

This tribe differs from the Daseyllini which follow by the slightly prolonged epistoma concealing the labrum and mandibles and the slightly separated posterior coxæ.

The genera which occur in our fauna are as follows :

Prosternum prolonged meeting the mesosternum and limited on each side in front with an elevated line divergent anteriorly.

Antennæ slender, elongate, joints 2—3—4 very short, together not longer than the fifth.....**Macropogon.**

Antennæ subserrate, joints 2—3 only, short, together equal to the fourth.

Eurypogon.

Prosternum not prolonged nor meeting the mesosternum, in front convex without raised lines.

Antennæ serrate, joint two short, third a little longer and but little shorter than the fourth.....**Allapogon.**

The genera of this tribe seem to have a certain relationship with the Eucnemidæ through *Cerophytum*. *Allopon* presents characters somewhat at variance with those assigned the tribe by Dr. Leconte, (Classification p. 178). The definition has been based on other characters as will be seen above.

MACROPOGON Motsch.

Head slightly deflexed, inserted in the thorax as far as the eyes which are moderately prominent and transversely oval. Antennæ slender, longer than half the body, joints 2—3—4 short and subequal. Front prolonged beyond the insertion of the antennæ concealing in great part or entirely the labrum and mandibles. Labrum short, transverse. Mandibles arcuate. Mentum transverse, arcuate in front, ligula not prominent. Labial palpi short, last joint triangular. Maxillary palpi moderately long, second and fourth joints moderately elongate and equal, the latter elongate triangular. Prosternum in front of coxæ moderately long, carinate on each side, posteriorly slightly prolonged and meeting the mesosternum, coxæ not more prominent than the prosternum, trochantins large. Mesosternum horizontal, moderately protuberant and with a groove on the lower face. Metasternum moderately long, body winged. Posterior coxal plates narrow scarcely dilated within, separated on the median line. Abdomen with first segment short, 2—3—4 equal, fifth longer. Legs moderate, tibiæ with small spurs. Tarsi slender, first joint as long as the next two together, fourth rather small, joints 2—3—4 lobed beneath, the lobe

of the last, longer. Claws slightly dilated at base. Trochanters of anterior and middle legs moderately long.

The species known to me are separated in the following manner :

Joints 2—3—4 of the antennæ very short, equal, together not as long as the fifth which is longer than the sixth. (Pl. I, fig. 1 b.)

Thorax nearly square. **testaceipennis.**

Joints 2—3—4 of the antennæ short not moniliform, but progressively longer, together nearly equal to the fifth which is longer than the sixth. (Pl. I, fig. 1.)

Thorax nearly as broad at base as the elytra the sides decidedly divergent..... **piceus.**

Joints 2—3—4 of antennæ submoniliform and nearly equal, together nearly equal to the fifth which is not longer than the sixth. (Pl. I, fig. 1 c.)

Thorax a little broader at base than apex. Antennæ and legs ferruginous..... **rufipes.**

M. testaceipennis Motsch.—Form elongate, black, elytra luteous, suture and margin posteriorly narrowly black, sparsely clothed with short semi-erect yellow hair. Head punctate. Antennæ slender, piceous, four-fifths the length of body, joints 2—3—4 moniliform, together a little longer than half the fifth which is a little longer than the sixth. Thorax nearly square slightly broader at base, disc moderately convex densely punctured and with the oblique impressions not evident. Elytra oblong nearly parallel, with rows of moderate punctures which continue to tip but become somewhat finer, intervals transversely wrinkled and with a row of fine punctures. Body beneath black, not densely punctate. Legs black. Length .26 inch; 6.5 mm.

Three specimens are before me which agree entirely in color, the body being black, the elytra reddish-yellow or luteous with the suture and apical margin narrowly black. This color may not be constant but the structure of the antennæ will distinguish it from either of the following.

Occurs in the Mariposa District of California, and is rare.

M. piceus Lec.—Resembles the preceding and differs as follows: Color entirely piceous, sparsely clothed with brownish hair. Antennæ with joints 2—3—4 small but not moniliform, progressively longer, together nearly equal to the fifth which is longer than the sixth. Thorax nearly as broad at base as the elytra, narrowed in front, hind angles subacute. Elytra obsolete striate, striæ moderately punctured, intervals punctulate very sparsely. Length .30 inch; 7.5 mm.

Two specimens from Oregon, two from Montana. One of the former has the humeri pale.

M. rufipes n. sp.—Oblong, piceous, moderately shining, sparsely clothed with short, semi-erect brownish hair, legs and antennæ rufous. Head coarsely punctate. Antennæ slender, three-fourths the length of body, joints 2—3—4 submoniliform, together nearly equal to the fifth which is not longer than the sixth. Thorax trapezoidal, a little broader at base than long and narrowed in front, sides nearly straight, disc moderately convex, coarsely and moderately

densely punctured, middle line slightly smoother, a vague oblique impression behind the middle. Elytra a little wider than the thorax, oblong parallel, narrowed at apical third, disc moderately convex and with rows of punctures coarse at base gradually finer and more confused toward the tip, intervals with a row of finer punctures. Body beneath more shining than above, moderately densely punctate. Length .22 inch; 5.5 mm.

Occurs in the White Mountains, New Hampshire, (Austin), and in Illinois, (Ulke).

EURYPOGON Motsch.

This genus agrees in all respects with *Macropogon* except in the structure of the antennæ. The second joint is small oval, third longer, the two together longer than the fourth, joints 4—11 slender, subequal.

Two species are known, distinguished as follows:

Punctures of elytra coarse, intervals less wide than the punctures.....**niger**.
Punctures fine, intervals broader.....**californicus**.

E. niger Mels.—Oblong, black, shining, sparsely pubescent. Head very sparsely punctate. Thorax one-half broader than long, slightly broader at base, sides straight, disc moderately convex, sparsely coarsely punctate and with traces of the oblique impressions posteriorly. Elytra a little wider than the thorax, oblong parallel, with rows of moderately coarse punctures closely placed, intervals with a row of fine punctures, surface with semi-erect short black hair. Body beneath black, shining, sparsely punctate, legs piceous. Length .16—.18 inch; 4—4.5 mm.

Occurs from Pennsylvania to Kansas.

E. californicus n. sp.—Oblong, piceous, moderately shining, sparsely pubescent. Head coarsely sparsely punctate. Thorax very nearly twice as wide at base as long, narrower at apex, sides nearly straight, disc moderately convex with broad vague depressions posteriorly, surface sparsely coarsely punctate. Elytra a little wider than the thorax, oblong parallel, gradually narrowing at apical third, surface with rows of moderately fine punctures not closely placed, the intervals flat, much broader than the punctures and with a single row of finer punctures, sparsely clothed with semi-erect, short, brownish hair. Body beneath piceous, sparsely punctate. Legs and antennæ brownish. Length .18 inch; 4.5 mm.

Distinct from *niger* by the finer elytral sculpture and its more elongate form.

One specimen from the Geysers, California, given to Dr. Lecote by Mr. C. Bolter.

It is probable that the discovery of other species will show the necessity of uniting this genus with *Macropogon*.

ALLOPOGON n. g.

Form and general appearance of *Macropogon* differing as follows:

Antennæ serrate, not longer than half the body, first joint cylindrical, rather short, second short broader than long, third one-half

longer than the second, conical slightly flattened, joints 4—10 triangular as broad as long, joint eleven oval. Clypeus rounded in front, without suture, concealing the labrum and mandibles. Mouth parts as in *Macropogon*. Prosternum slightly prominent at tip but not received by the mesosternum. Tarsi shorter than in *Macropogon* but similarly lobed. Claws simple.

A. villosus n. sp.—Oblong, brownish piceous (but variable), sparsely clothed with long brown erect hair. Head densely punctured. Thorax a little broader than long, slightly narrowed in front, apex truncate, base and sides feebly arcuate, disc moderately convex, coarsely and densely punctured. Elytra broader at base than the thorax, sides slightly converging posteriorly, more narrowed at apical fourth, disc moderately convex, striate, striæ coarsely and closely punctured, intervals very narrow. Body beneath paler than above, coarsely but not densely punctured. Length .24 inch; 6 mm.

The color is variable, my specimen is piceous with the head, thorax and under surface somewhat paler, one in Mr. Ulke's cabinet has the head and thorax ferruginous.

Occurs in Middle California, Mariposa.

While the form of this insect and most of its characters place it near *Macropogon* and *Dasyogon*, it differs essentially in the structure of the antennæ and the want of articulation between the pro- and mesosternum.

Tribe II.—*Dascyllini*.

Mandibles and labrum at least moderately prominent, the latter not retractile. Clypeal suture usually obliterated. Trochanters of anterior and middle legs normal in size not elongate.

These characters separate the present from the preceding tribe. The posterior coxæ are contiguous in *Dascyllus*, *Anorus* and *Aræopus*, distinctly separated in *Anchytarsus*, and merely slightly contiguous in the others.

In geographical distribution we find *Odontonyx* and *Anchytarsus* represented each by one species in the Atlantic region, the other genera are peculiar to the Pacific fauna and have one species each, excepting *Dascyllus* with two.

The following table will enable the genera to be recognized:

Mandibles prominent, acutely margined above, rectangularly flexed at tip, head not retracted. Thorax acutely margined.

Tarsi simple, slender..... **Stenocolus**.
Tarsi lobed beneath.

Anterior coxæ separated by the prosternum and but very little more prominent than it..... **Dascyllus**.

Anterior coxæ prominent and contiguous. **Anorus**.

Mandibles not prominent, arcuate at tip, not acutely margined above, head strongly deflexed. Tarsi slender.

Claws pectinate. Thorax acutely margined.....**Odontouyx.**

Claws simple. Thorax not acutely margined.

Antennæ slender, middle coxæ not more widely separated than the anterior, thorax obtusely margined, prosternum moderately long before the coxæ.....**Anchytarsus.**

Antennæ serrate, (pectinate ♂), moderately long, middle coxæ twice as widely separated as the anterior, margin of thorax very obtusely rounded, prosternum short in front of the coxæ.....**Anchyteis.**

Antennæ serrate, very little longer than head and thorax, middle coxæ and thorax as in *Anchyteis*, prosternum short, vertical in front of the coxæ.....**Aræopus.**

Of the above genera *Stenocolus* alone has an onychium. The anterior coxæ are moderately separated in the first two alone, the tip of the prosternum being also more prolonged. The first four genera have the thorax acutely margined, in the others the margin is either obtuse or very rounded. In *Anchytarsus* and *Anchyteis* the last joint of the maxillary palpi is triangular, in *Aræopus* moderately elongate, flattened and truncate.

Lichas Westw. is synonymous with *Stenocolus*, both appear to have been published at nearly the same time, and as *Lichas* has already been used in another department of Zoology, there is a reason for retaining our own generic name apart from its very little earlier date.

STENOCOLUS Lec.

Head moderately deflexed not retracted, frontal suture distinct, clypeus partly membranous in front. Labrum transverse, rounded in front. Mandibles prominent, suddenly arcuate at tip, upper side acutely carinate. Mentum transverse, semicircular in front, ligula moderately prominent, emarginate, lobes rounded, the terminal joint of the palpi feebly triangular. Last joint of maxillary palpi elongate, obliquely truncate at tip. Eyes moderately prominent, rounded, partly concealed by the angles of the thorax. Antennæ as long as half the body, serrate, first joint conical, slightly arcuate, second small, rounded, 3—9 moderately elongate, (10—11 are wanting). Prosternum long before the coxæ, and moderately widely separating them, prolonged obtusely and meeting an emargination of the mesosternum. Anterior coxæ oval, not more prominent than the prosternum, with a large trochantin. Mesosternum oblique, excavate in front. Metasternum moderately long, body winged, episterna wide, epimeron very small. Posterior coxæ moderately dilated within and slightly separated. Abdomen with segments 1—4 nearly equal, fifth longer. Legs moder-

ate, tibiæ with short spurs. Tarsi slender, not lobed nor dilated, first joint a little longer than either of the next three, last joint elongate, with simple claws and a bisetose onychium.

The above description is made from a mutilated specimen in the cabinet of Dr. Leconte, with the assistance of his original description which was made from a more perfect example. I have also had a specimen of *Lichas funebris* Westw., before me and by a comparison of the characters of *Stenocolus* Lec., find the two entirely congeneric.

S. scutellaris Lec.—Body elongate, narrowed at each end, sides parallel at the middle, piceous, covered with very short, depressed, dirt colored (cinereous), pubescence. Antennæ black, strongly serrate in the male, slightly serrate in the female. Thorax nearly three times as wide as the head, nearly twice as wide as long, strongly narrowed in front, sides at the middle almost angulated, then slightly concave (sinuate), to the posterior angles which are acute; base bisinuate; surface finely punctured, broadly concave along the margin behind the middle and broadly transversely impressed at base. Scutellum round, covered with dense white hair. Elytra scabrous with shallow punctures, spaces between the punctures finely punctulate; the elevated lines which may be traced in allied genera are slightly visible. Body beneath more densely pruinose with short cinereous hair. Length .55—.87 inch; 14—22 mm. (Pl. I, fig. 2).

I copy above the description given by Dr. Leconte. I would add that the segments of the abdomen have on each side a smooth callus. In *L. funebris* these callosities are replaced by small foveæ. The form of the present species is very nearly that of *L. funebris*.

Two specimens, Sacramento, California.

DASCYLLUS Latr.

Mandibles prominent, rather suddenly arcuate at tip, the upper edge acute, tip acute. Labrum prominent. Frontal suture distinct. Eyes transversely oval, entire. Antennæ longer than the head and thorax, serrate. Terminal joint of both palpi flattened oval, subtruncate at tip. Head slightly deflexed, not retractile. Prosternum moderately long in front of the coxæ, prolonged between and moderately separating them extending posteriorly to meet the mesosternum. Anterior coxæ transverse, not more prominent than the prolongation of the prosternum, trochantin large. Mesosternum oblique, deeply grooved its entire length. Middle coxæ oval, slightly angulate externally, without trochantin. Metasternum moderately long, episterna wide, narrower posteriorly, epimera very small. Posterior coxæ widely but gradually dilated within. Legs moderate, tibial spurs on all the feet. Tarsi dilated but less so in the female, the joints more or less cordiform, 2—3—4 lobed beneath, in the latter the lobe is deeply

divided. Claws simple, feebly angulated near the base, divaricate. Onychium entirely wanting. Abdomen of five nearly equal segments in both sexes, the terminal of the male slightly longer.

The above characters supplement those already given in the books. The body is oblong parallel, pubescent and winged, although the wings in the female are less developed than in the male and probably unsuitable for flight.

Two species occur both from the Pacific region, distinguished as follows:

Pubescence above greyish, on the elytra with two irregular darker transverse bands. Third joint of antennæ not longer than the fourth.....**Davidsoni**.
 Pubescence plumbeous, uniform. Third joint of antennæ decidedly longer than the fourth.....**plumbeus**.

D. melanophthalmus Guér., should be stricken from our lists, it is a native of Santo Domingo.

D. Davidsoni Lec.—Form oblong parallel, piceo testaceous or brownish, moderately densely cinereo-pubescent, on the elytra two transverse, sinuous, dentate bands of darker pubescence. Head densely punctulate. Antennæ a little longer than half the body, third joint very little longer than the fourth. Thorax twice as wide as long, narrowed in front, apex truncate, base bisinuate, sides arcuate, margin very narrowly depressed, surface densely punctulate. Elytra striate, striæ less impressed at base, moderately punctured, intervals alternately slightly broader and more convex, finely punctulate. Body beneath moderately densely punctulate and pubescent. Length .40—.52 inch; 10—13 mm.

The males have the last ventral prolonged in an oval manner at middle and sinuate each side; near the base is a vague transverse impression. The female of *Davidsoni* is unknown to us.

Occurs in California, in the Upper Sacramento valley.

D. plumbeus n. sp.—Form oblong parallel, piceous nearly black, sparsely clothed with fine plumbeous pubescence. Head densely punctured. Thorax nearly twice as wide as long, slightly narrower in front, sides moderately arcuate and feebly explanate, surface densely punctured. Elytra very little wider than the thorax, parallel, narrowed at apical fourth, surface not striate but with rows of coarse deeply impressed punctures which are often longitudinally confluent, intervals moderately densely punctulate. Body beneath moderately densely punctulate and clothed with fine plumbeous pubescence. Length ♂ .40—.54 inch; 10—13.5 mm; ♀ .80 inch; 20 mm.

The female is a larger and more robust form with much less evident elytral sculpture, the punctures being much finer. The disc of the elytra has however five vaguely elevated lines between which the punctuation is somewhat confused. The last ventral is but little longer than the fourth and subtruncate at middle. The elytral sculpture of the males primarily distinguishes this species from *Davidsoni*

Lec., while the pubescence of the latter is not uniform, but on the elytra two transverse sinuous bands of darker color are very evident in well preserved specimens. In the present species the third joint of the antennæ is very nearly as long as the fourth and fifth together, while in *Davidsoni* it is but little longer than the fourth. The color of the tegument is also different, that of the present species nearly black, while in *Davidsoni* it is usually brownish testaceous, rarely piceous.

My specimens were collected in the Mariposa district of California, by Mr. Alphonse Thevenet.

ANORUS Lec.

Form elongate, linear. Head nearly horizontal. Eyes round, moderately prominent. Antennæ slender, subserrate. Mandibles prominent, tip acute and suddenly arcuate, behind the tip obtusely dentate, upper edge acute. Frontal suture distinctly impressed, labrum short transverse. Mentum transverse, narrower in front, ligula membranous with two moderately long appendages at tip, labial palpi slender, last joint longer than the preceding. Maxillary palpi longer but similar. Prosternum moderately long in front of the coxæ but not prolonged between them. Anterior coxæ conical, prominent and contiguous with a large trochantin. Middle coxæ oval, moderately prominent, narrowly separated by the nearly horizontal mesosternum; mesosternal side pieces nearly equal. Metasternal episterna moderate in width, parallel with small epimeron. Posterior coxæ contiguous, moderately dilated internally. Legs slender, tibiæ with spurs. Tarsi slender, first joint as long as the next three, third with a short lobe beneath, fourth with a deeply divided long lobe. Claws slender, slightly thickened at base, divaricate, and without onychium between them. Abdomen of five nearly equal segments. Body winged.

The only foreign genus with which this appears to have any affinity is *Therius*, from which it differs in the form of the mandibles, palpi and tarsi.

One species occurs in California.

A. piceus Lec.—Elongate, parallel, piceous or testaceous, finely cinereo-pubescent, moderately shining. Head moderately densely punctulate. Thorax a little more than twice as wide as long, apex truncate, base bisinuate, sides arcuately narrowing to the front, hind angles rectangular, lateral margin acute but not explanate, apical margin fimbriate, disc moderately convex not very densely punctate. Elytra a little wider than the thorax, parallel, narrowed at apical fourth, surface substriate, vaguely seriatly punctate, intervals slightly convex, punctulate. Body beneath more shining, sparsely punctulate. Length .33—.44 inch; 8—11 mm. (Pl. I, fig. 3).

Occurs from San Diego to Owen's Valley, California, and flies in the early evening.

ODONTONYX Guér.

Head vertical, retracted, resting in repose against the prosternum which is flattened to the front, frontal suture absent. Eyes round, moderately prominent, partly concealed by the angles of the thorax. Antennæ feebly serrate, second joint small. Labrum transverse, arcuate in front, partly concealing the mandibles which are robust, not prominent nor acutely margined above. Mentum transverse, narrowed in front, ligula prominent with four slender ciliate lobes. Maxillary palpi longer than the labial, both with the terminal joint securiform. Prosternum vertical in front, prolonged between the coxæ, terminating in a point meeting the mesosternum. Anterior coxæ conical and more prominent than the prosternum, with large trochantin. Mesosternum moderately separating the coxæ, arcuate and sulcate. Metasternum moderately long, side pieces wide, the epimera small. Posterior coxæ gradually dilated within, very narrowly separated. Abdominal segments nearly equal. Legs moderate, anterior and middle tibiæ slightly compressed, tibial spurs distinct but small. Tarsi slender. Claws pectinate. Onychium wanting. (Pl. I, fig. 13).

The form of the claws is unique in the family.

O. trivittis Germ.—Oblong oval, parallel at middle, piceous pubescent. Head punctate. Thorax a little more than twice as wide as long, arcuately narrowed to the apex, base bisinuate, sides acutely margined, disc convex, finely punctured, color reddish-yellow with two large black spaces, the pubescence the color of the surface. Scutellum yellow. Elytra very little wider than the thorax, substriate, striæ punctured, intervals densely punctate-scarious, surface clothed with brownish hair with cinereous vittæ. Body beneath and legs black, densely finely punctulate, clothed with short brownish hair. Length .32—.36 inch; 8—9 mm.

Occurs in the Middle States.

ANCHYTARSUS Guér.

Head deflexed but not retracted against the prosternum. Antennæ slender, as long as half the body. Mouth as in *Odontonyx*. Prosternum moderately long in front of the coxæ, horizontal, prolonged between them and slightly extending posteriorly, coxæ oval, more prominent than the prosternum, trochantin large. Mesosternum narrowly separating the middle coxæ, notched at its anterior border, the coxæ with distinct trochantin. Metasternum moderate, side pieces moderately wide, epimera small. Posterior coxæ moderately dilated within, separated by a narrow intercoxal process. Segments of abdomen equal, fifth a little longer. Legs moderate, tibiæ

with small spurs. Tarsi slender, simple without onychium, claws simple. The characters given in the table separate this genus from its closest allies.

A. bicolor Mels.—Oblong oval, piceous, moderately shining, sparsely pubescent. Head very sparsely finely punctate. Antennæ piceous, two basal joints pale. Thorax twice as wide as long, sides arcuately narrowed to the front, margin obtuse, base bisinuate, disc convex, very sparsely finely punctulate. Elytra not wider at base than the thorax, oblong oval, slightly broader behind the middle, surface substriate, striæ obsolete punctured, intervals finely punctulate. Body beneath very sparsely finely punctulate. Legs piceous, femora paler. Length .20—.24 inch; 5—6 mm.

Occurs from New York to Georgia, but rare.

ANCHYCTEIS n. g.

Head deflexed. Prosternum in front of coxæ short, prolonged between and slightly posterior to them, coxæ oval, more prominent than the prosternum. Frontal suture distinct. Mouth parts as in *Odontonyx*, except that the lobes of the ligula are much less prolonged. Antennæ a little longer than half the body, serrate ♀ or pectinate ♂, first joint rather short, conical, second very small, 3—10 moderately long, bearing a process from the anterior angle as long as the joint, eleventh simple, as long as the two preceding. Mesosternum separating moderately the middle coxæ which are oval and slightly prominent. Metasternum moderate, side pieces rather wide, epimera very small. Posterior coxæ very gradually dilated internally and contiguous on the median line. Legs moderate, tibiæ with spurs, tarsi slender, simple without onychium, claws simple.

This genus is distinguished from *Anchytarsus* by the structure of the antennæ, the more deflexed head with a frontal suture and the contiguous hind coxæ.

A. velutina n. sp.—Oblong oval, robust, black, moderately shining, sparsely clothed with extremely fine black pubescence. Head deflexed not visible from above, densely punctate. Thorax one-third broader than long, narrowed in front, apex truncate, sides very little arcuate, base bisinuate, disc convex, moderately densely punctured. Scutellum oval, concave, acute at tip. Elytra wider than the thorax at base, sides nearly parallel, narrowed at apical third, convex, surface obsolete striate, striæ punctured near the apex, intervals flat at base, more convex posteriorly, densely punctulate. Body beneath densely finely punctulate. Length .40 inch; 10 mm. (Pl. I, fig. 4).

In form this insect resembles a gigantic *Ptilodactyla*. The striæ are often extremely vague, but in those in which the sculpture is best developed there are two short scutellar striæ. One specimen before me has brownish pubescence, another has the elytra and tibiæ luteous.

Four ♂, one ♀, collected by H. K. Morrison, in western Nevada, the specimen with luteous elytra was given me by Mr. H. Edwards, who collected it at Shasta, California.

ARÆOPUS Lec.

Head deflexed, in repose resting against the prosternum which is very short before the coxæ and vertical in front, concealed from above by a slight prolongation of the thorax. Frontal suture distinct, clypeus partly membranous in front. Antennæ but little longer than the head and thorax, first joint obconical, second short, 3—10 subserrate, as broad as long, eleventh a little longer and more slender. Eyes round, not prominent. Labrum transverse, rounded in front. Mandibles not prominent. Mentum transverse, narrowed in front. Ligula with four slender ciliate appendages, the palpi short with the last joint triangular. Last joint of maxillary palpi elongate triangular. Prosternum short in front of the coxæ and vertical for the reception of the head, narrowly prolonged between the coxæ terminating in an obtuse point meeting the mesosternum. Anterior coxæ conical, more prominent than the prosternum and with a large trochantin. Mesosternum oblique, separating the coxæ moderately, triangularly emarginate in front. Metasternum moderate, side pieces wide, epimera small. Posterior coxæ gradually dilated within and contiguous. Segments 1—4 of abdomen nearly equal, fifth a little longer. Legs moderate, tibiæ with small spurs. Tarsi slender, simple, joints 1—4 gradually decreasing, fifth as long as the preceding three, without onychium and with simple claws.

This genus is closely allied to the three which precede, especially *Odontonyx*, although differing in many of its details. The thoracic margin is more completely obliterated than any of the preceding genera, and the anterior margin is arcuate forming a hood concealing completely the head from above.

A. monachus Lec.—Oblong, brownish, very feebly shining, moderately densely clothed with brownish-yellow pubescence. Head densely punctured. Thorax wider than long, much narrowed in front, apex oval and overhanging the head, base bisinuate, margin very obtusely rounded, disc convex, densely punctured, a fovea at base on each side of the scutellum. Elytra a little wider than the thorax, gradually but feebly wider to behind the middle then gradually narrowed to tip, surface feebly striate, the sutural deeply impressed near the base, striæ finely punctured, intervals densely punctulate. Body beneath densely punctulate, abdominal segments 1—4 with a distinct impression posteriorly close to and parallel with the sutures. Length .40 inch; 10 mm. (Pl. I, fig. 5).

Occurs in Oregon.

Sub-Family II.—HELODIDÆ.

This sub-family differs principally from the preceding in the absence of trochantin to the anterior coxæ. The species are all of rather small size and are found on plants near water. The genera are capable of division into tribes in the following manner :

Tarsi with the fourth joint very small, third lobed beneath. (Pl. I, fig. 6 a).

PTILODACTYLINI.

Tarsi with the fourth joint as large or larger than the third.

Posterior coxæ very large.....EUCINETINI.

Posterior coxæ at most moderately dilated internally.

Claws without membranous appendage.

Front moderately broad, prosternum very short before and very narrow between the coxæ.....HELODINI.

Front narrowed by the insertion of the antennæ, prosternum distinct before and between the coxæ.....EUBRINI.

Claws with membranous appendage arising from the base of each claw and as long as it. (Pl. I, fig. 16 c).

Front narrowed by the insertion of the antennæ.....PLACONYCHINI.

In the above tribes the Ptilodactylini seem to lead very naturally from *Anchytarsus* of the preceding tribe. Thomson detects a relationship between *Eucinctus* and *Catops* which entirely escapes me, although the structure of the under side and legs has some resemblance to *Mordella*, without however any special relationship. The *Eubriini* and *Placonychini* have more than a resemblance to the Parnidæ, the anomalous *Psephenus* of that family affording a close link with the present. The last named tribe by its appendiculate claws approaches in another direction the Melyridæ, but the affinities otherwise are not well marked.

Tribe I.—*Ptilodactylini*.

Head deflexed, concealed from above by a moderate prolongation of the thorax. Clypeus separated from the front by a distinct suture. Prosternum moderate in front of the coxæ and prolonged between them but less prominent. Anterior coxæ without trochantin. Tibiæ not carinate on the outer edge. Tarsi above convex, the first joint of the posterior longer than the others, the fourth on all very small and almost concealed within the third, second and third lobed beneath. Claws broadly toothed at base. Tibial spurs moderate on the two anterior pairs, elongate on the posterior.

The above characters excepting the small fourth tarsal joint, apply to the limited representation of the tribe in our fauna rather than to the tribe as a whole. One genus occurs in our fauna remarkable for

the structure of the antennæ of the male, in which the joints 3—10 are furnished with an articulated appendage as long as the joint or even longer, inserted near the base.

PTILODACTYLA Latr.

Head deflexed, clypeus distinct from the front and apparently articulated. Eyes round, moderately prominent, partly concealed by the angles of the thorax. Antennæ arising very close to the margin of the front, nearly as long as the body, slender, simple in the female, in male with joints 4—10 furnished with an articulated appendage arising from the base and as long as the joint itself. Labrum moderately prominent, transverse. Mentum transverse, rounded in front, ligula large, bilobed, the palpi short, the terminal joint oval. Maxillary palpi longer, the terminal joint slightly triangular in the male, oval in the female. Prosternum moderate before the coxæ and very narrowly prolonged between them, the coxæ oval, prominent, without trochantin. Middle coxæ narrowly separated. Posterior coxæ gradually but feebly dilated within and contiguous at middle. Abdomen of five segments, the fifth longer and emarginate in the male. Legs slender, with distinct terminal spurs, those of the posterior tibiæ longer. Tarsi with the first joint long especially on the hind legs, the second and third are feebly bilobed and beneath the second is slightly prolonged, the third has a long lobe, fourth joint small, scarcely visible, fifth moderately long. Claws with a broad rectangular tooth at base.

The form of the species is oblong, the head concealed from above and the aspect much like some of the genera of the preceding subfamily.

Two species are known to me.

Tooth of tarsal claw basal, not attaining the middle of the claw.

Last segment of ♂ emarginate, of ♀ entire..... **serricollis.**

Tooth of tarsal claw attaining the middle and on the anterior tarsi nearly as long as the claw.

Last segment ♂ and ♀ emarginate..... **angustata.**

P. serricollis Say.—Oblong oval, castaneous or piceous, moderately shining, sparsely pubescent. Head coarsely and moderately densely punctured. Thorax when viewed from above nearly semicircular, apex slightly prolonged over the head, lateral margin acute, base feebly bisinuate, the margin finely tridenticulate opposite the scutellum, disc convex, coarsely and moderately densely punctured. Scutellum cordiform. Elytra oblong oval, not wider than the thorax, sides moderately arcuate, disc moderately convex and with striæ of moderately coarse punctures, the intervals sparsely punctulate, scutellar stria long. Metasternum shining, sparsely coarsely punctate. Abdomen sub-

opaque, finely alutaceous, sparsely punctate. Legs and antennæ pale. Length .14—.20 inch; 3.5—5 mm. (Pl. I, fig. 6).

The tooth of the claws is rectangular at its free end and is not half the length of the claw. The rows of elytral punctures are often very indistinct.

Occurs from the Middle States westward to Missouri and south to Florida.

P. angustata n. sp.—Similar in form to the preceding but more slender and parallel. Length .14—.18 inch; 3.5—4.5 mm.

The principal differences between this and the preceding species are those given in the table. The tooth of the claws is more prolonged and extends beyond the middle in the posterior claws, and in the anterior claws is still longer, so that a form similar to that of *Phytalus* is produced.

Three specimens, Florida.

Tribe II.—*Eucinetini*.

Head strongly deflexed, resting on the anterior coxæ, front prolonged in a feeble beak, frontal suture distinct. Labrum moderately prominent concealing the mandibles. Antennæ filiform. Labial palpi with terminal joint ovoid, of the maxillary cylindrical pointed at tip. Thorax short, narrowed in front, beneath with an extremely short prosternum in front of the coxæ and a small prolongation at middle, side pieces entirely wanting. Anterior coxæ long and without trochantin, received in repose in cavities on each side of the mesosternum. The latter separating the middle coxæ, anteriorly a triangular depression which receives the small point of the prosternum in repose, middle coxæ oval, not prominent and without trochantin, the side pieces large, diagonally divided and nearly equal. Metasternum very short, acutely prolonged at middle between the posterior coxæ, the episterna of moderate width, narrowed behind and without epimera. Posterior coxæ formed of broad plates which attain the side margin of the body and cover the greater part of the first ventral segment. Legs moderately long, slender, anterior tibiæ without spurs, middle and posterior with rather long spurs. Tarsi slender, gradually attenuate to tip, joints 1—4 gradually decreasing in length, last joint a little longer than the fourth. Claws small, simple. Body oval-elliptic or navicular, convex, pubescent. (Pl. I, fig. 7, details).

The males have the anterior tarsi dilated and a distinct sixth ventral segment. The anterior tarsi of the female are slender, and the sixth segment in some species not visible and in others very

a little more closely punctate. The sixth segment in the female is not visible. The posterior tibiæ have two terminal spurs.

Occurs in Illinois and Virginia.

E. testaceus Lec.—Elongate ovate, narrower posteriorly, testaceous, sparsely pubescent. Head and thorax very sparsely punctulate. Elytra not densely punctate and with the sutural stria alone distinct. Body beneath not very densely punctulate. Length .14 inch; 3.5 mm.

More elongate than either of the preceding and of a pale color. The elytra are less densely punctured than in *oviformis* and not substriate. The sixth segment is quite visible in the female. The posterior tibiæ have two terminal spurs.

The color of this species appears to be constantly pale.

Occurs from Canada to Pennsylvania.

E. punctulatus Lec.—Moderately elongate oval, convex, brownish or piceous, sparsely finely pubescent. Head and thorax sparsely and very finely punctulate. Elytra very densely punctulate and without traces of striæ except the sutural. Body beneath densely finely punctulate. Antennæ and legs slightly paler than the rest of the body. Length .10 inch; 2.5 mm.

This species has the elytra so densely punctulate that the interspaces are smaller than the punctures. The sixth segment is barely visible in the female. The posterior tibiæ have two spurs.

Two specimens, Michigan, Hubbard and Schwarz; Virginia, Ulke.

E. morio Lec.—Elongate oval, narrower behind, convex, nearly black, sparsely pubescent. Head and thorax finely sparsely punctulate. Elytra distinctly substriate from base to apex, surface densely transversely strigose, the strigæ composed of minute punctures. Body beneath densely punctulate. Legs and antennæ piceous. Length .10—.12 inch; 2.5—3 mm.

Varies in color from black to brownish. In the female the sixth segment is distinctly visible and in the male a small seventh also. The posterior tibiæ have two spurs.

Illinois, Virginia and Georgia.

E. terminalis Lec.—Similar in form and sculpture to *morio*, but the elytra have a moderately well defined rufous spot and the strigæ are less approximate. Length .10 inch; 2.5 mm.

The sixth segment is feebly visible in the female. The posterior tibiæ have one spur only. In this latter character especially, it differs from *morio*. I have several specimens from New Mexico, a little larger and more shining, which with further specimens may be found distinct.

Occurs from Vermont to Illinois. A description of this species without name occurs in Proc. Acad. 1853, p. 357, the name first appears in the List Col. N. A. p. 50, without evidence of the identity of the two.

E. strigosus Lec.—Form of *morio* but much more shining, entirely black, very sparsely pubescent. Elytra with strigæ at least twice as distant as in either of the preceding. Body beneath densely punctulate. Legs and antennæ ferruginous. Length .10 inch; 2.5 mm.

The sixth segment is feebly visible in the female. The posterior tibiæ have but one spur.

One specimen, Pennsylvania. I have seen another specimen of little greater size with the tip of the elytra reddish, from Nevada, in the cabinet of Mr. Ulke, which with a larger number of specimens may prove distinct.

Tribe III.—*Eubriini*.

Head deflexed, front narrow contracted by the insertion of the antennæ and prolonged into a slight beak. Mandibles entirely concealed. Maxillary palpi slender, elongated. Anterior coxæ transverse, without trochantin, separated by the prosternum and not more prominent than it except in *Acneus*. Middle coxæ more widely separated than the anterior, the mesosternum being more or less protuberant, either truncate or emarginate. The posterior coxæ are scarcely dilated internally. Tibiæ with minute terminal spurs, in two genera. Tarsi slender, slightly dilated in *Dicranopselaphus*, claws variable.

The species composing this tribe are of oval moderately robust form with teguments of firmer consistence than in *Helodes* or *Cyphon*. The genera in our fauna all agree in having the terminal joint of the palpi simple, without appendages. In *Eubria* the last joint of both palpi is furnished with three short spines and in the *Dicranopselaphus* of Mexico with two.

The most curious fact noticed is the sexual difference in the claws of *Ectopria*. In the female the claws are simple at tip, at base a broad tooth rectangular in front; in the male the tip is bifid. Guérin describes the claws of *Dicranopselaphus* as tridentate but this is not exactly true, he probably saw the claws obliquely instead of in front. As I have seen only males of this genus I do not know if they differ sexually as in *Ectopria*, but it is probable that this is the case. The claws of *Eubria* examined by me have no basal tooth as in *Ectopria*, but the anterior claw on each pair of legs is bifid at tip, (Pl. I, fig. 9), the posterior entirely simple; my material being entirely insufficient I am unable to say whether the claws differ in the sexes. As the genus does not occur in our fauna this is left for European determination. The bifid structure of the claw can only be detected by a comparatively high power and by viewing the claw directly on end.

The genera of this tribe are as follows:

Prosternum of moderate width not depressed between the coxæ.

Claws toothed at base.

Tarsi slender, fourth joint smaller than the third and not prolonged beneath the fifth.....**Ectopria.**

Tarsi slightly dilated, joints 2—3—4 feebly emarginate, the fourth slightly prolonged beneath the fifth.....**Dieranopselaphus.**

Claws not toothed at base, tarsi very slender.....**Eubria.**

Prosternum narrow depressed between the coxæ. Claws slightly broader at base. Tarsi as in *Ectopria*.....**Aeneus.**

ECTOPRIA Lec.

Head vertical, received in the thorax as far as the eyes which are partly concealed. Eyes moderately prominent. Antennæ half the length of body, feebly serrate ♀ or moderately strongly serrate ♂. Front narrowed by the insertion of the antennæ, then broader in front. Labrum transverse, concealing the mandibles. Mentum transverse, narrowed in front, ligula with four slender processes, the inner pair longer, labial palpi short, last joint triangular. Maxillary palpi slender elongate, second joint as long as the next two united, third short, fourth slender tip slightly oblique, truncate, chisel-shaped without terminal appendages. Prosternum moderately long before the coxæ, prolonged between them and meeting the mesosternum. Anterior coxæ not more prominent than the prosternum. Mesosternum oblique in front and broadly emarginate, the coxæ more widely separated than the anterior. Metasternum rather short, the episterna wide, epimera small. Posterior coxæ very narrow, not contiguous. Ventral segments subequal. Legs moderate, tibiæ with minute spurs. Tarsi slender, moderately elongate, not lobed, first and fifth joints equal and as long as the three intermediate together. Claws (Pl. I, fig. 8 g, h), slender and simple at tip ♀, or bifid at tip ♂, at base with a broad tooth in both sexes. Body ovate, convex, winged.

Male.—Antennæ decidedly serrate, first joint conical, second very small, third broadly triangular not longer than the fourth, joints 4—10 serrate or subpectinate, last joint elongate. Eyes large. (Pl. I, fig. 8 b).

Female.—Antennæ much less serrate than in the male, first two joints similar to the male, joints 3—4 equal, each as long as the first two and nearly to the fifth and sixth, joints 5—11 subequal, feebly serrate. Eyes smaller. (Pl. I, fig. 8 a).

This genus as will be seen by comparison possesses nearly all the essential characters of *Eubria*, but differs in the form of the claws and the absence of terminal appendages to the maxillary

palpi. The mesosternum is less prominent and decidedly emarginate in front.

One species occurs in our fauna.

E. nervosa Mels.—Oval, broader posteriorly, moderately convex, sparsely clothed with short cinereous pubescence. Thorax twice as wide as long, much narrowed in front, apex truncate, half as wide as base, emarginate, base feebly bisinuate, hind angles subacute, sides moderately arcuate, margin acute, disc moderately convex, sparsely punctate, intervals very finely punctulate but moderately shining, near the basal margin on each side of the scutellum a fovea sometimes indistinct. Elytra not wider at base than the thorax, sides arcuate and gradually broader to apical third, surface sparsely punctate, intervals finely punctulate-scabrous. Body beneath very finely punctulate. Femora piceous, tibiæ and tarsi pale. Length .12—0.20 inch; 3—5 mm. (Pl. I, fig. 8).

This species is extremely variable in size and appearance, presenting such a diversity of aspect that it may be considered entirely pardonable to have described it under several names. These will be considered in order.

Eurca nervosa.—This form is female. It is larger, more robust, piceous with slightly paler elytra on which are seen three darker lines which unite before the apex, replacing in this insect the striæ of *Eubria palustris*.

Ectopria tarsalis and *tibialis*.—Here the elytra are similar in color to the thorax, a little more shining than in *nervosa*, and with the darker lines entirely hidden. The thorax in this and the preceding form is entirely piceous without lateral pale space. Of this variety both ♂ and ♀ occur.

Var. ———.—This is a form in which the elytra exhibit faint traces of the vittæ but the sides of the thorax are broadly yellow.

Ectopria thoracica.—Here the elytra are always nearly black and the sides of the thorax broadly yellow. Of this form both sexes occur, the males more commonly.

In addition to the above variations I have seen three ♂'s in which the anterior margin of the clypeus is slightly reflexed. These have the antennæ serrate, the joints simply triangular, while other specimens precisely similar in every other respect have the margin of the clypeus normal. The males of the *thoracica* form present two variations in the form of the antennæ, the one simply serrate as above described, the other subpectinate, the branch from the anterior apical angle being nearly as long as the joint itself. (Pl. I, fig. 8 c, d).

From the above remarks it may be inferred that the species is an aggregate of as yet undifferentiated forms, as such I view it. That

the forms are taken indiscriminately together is an additional although slight evidence of their unity, and that the forms above described are entirely inseparable specifically is completely demonstrable from the material before me.

Occurs from Massachusetts to Georgia and Ohio.

DICRANOPSELAPHUS Guér.

Very closely allied to *Ectopria*, differing as follows: Tarsi slightly dilated, joints 2—3—4 slightly emarginate, the fourth as long as the third and slightly prolonged beneath.

The specimens before me are all males, and I find the claws broadly toothed at base and bifid at tip as in the males of *Ectopria*. The antennæ are also similarly formed, being either serrate or feebly pectinate. The terminal joint of the maxillary palpi is bi-appendiculate at tip in the Mexican species, but in our's even more slender and not appendiculate. I feel entirely unwilling to separate our species on this difference in the palpi, inasmuch as it agrees in every other respect with *Dicranopselaphus*, even in general details of ornamentation and sculpture.

One species occurs in our fauna.

D. variegatus n. sp.—Broadly oval, moderately convex, brownish, thorax darker, elytra clouded. Head densely punctate. Antennæ ♂ serrate, joints 3—10 triangular, very little longer than wide. Thorax semicircular with an apical emargination, base nearly truncate, sides regularly arcuate, disc moderately convex, a vague depression near base each side of scutellum, surface moderately densely punctate with small impunctured intervals, basal margin finely crenulate. Elytra as wide at base as thorax and but little longer than wide, sides feebly arcuate, apex broadly, disc moderately convex, brown with paler anastomosing lines which are less punctured, intervals apparently alutaceous but really with reticulations composed of lines of very closely placed punctures, surface clothed with fine and very short sericeous pubescence. Body beneath darker and a little more shining than above, very finely pubescent. Length .12 inch; 3 mm.

This species is smaller than *D. flavicornis* Guér., and with differently formed antennæ. The superficial resemblance in form, color and sculpture is very great, the last joint of the palpi is slender and not appendiculate.

Two specimens, Illinois and Maryland, rare.

ACNEUS n. g.

This generic name is proposed for a species which is closely allied to *Ectopria* but differs as follows:

Prosternum narrow and slightly depressed between the coxæ which are therefore more prominent than it.

The specimen before me is a female and therefore does not exhibit fully the generic characters. The claws are simple at tip and merely slightly broader at base without a tooth. The antennæ have the third joint as long as the three following united. When the male is known it will probably show characters in the claws more nearly like *Eubria* than *Ectopria*. The palpi are wanting in my specimen. The tarsi are as in *Ectopria*.

A. quadrimaculatus n. sp.—Oval, slightly broader behind, elytra each with two yellow spots. Antennæ nearly half the length of the body, first joint moderately stout, cylindrical, narrowed at base, second small globular, third nearly twice as long as the first two and equal to the next three, 4—10 triangular serrate, eleventh longer than the tenth. Thorax semicircular with the apex emarginate, base feebly bisinuate, disc convex with the posterior fovea, surface shining, very sparsely punctate and with very little pubescence. Elytra as wide at base as the thorax, very little longer than wide, disc moderately convex with rather coarse punctures forming distant but irregular striæ, intervals densely punctulate-scabrous but moderately shining and with extremely fine pubescence; each elytron with two yellow spots, one oblique a little in front of middle, the second near the sutural angle smaller. Body beneath black, moderately shining, finely sparsely punctulate and finely pubescent. Legs black. Length .16 inch; 4 mm. (Pl. I, fig. 10).

Of the form of *Ectopria* but with more shining surface.

One specimen, California, (Sanzalito?).

Tribe IV.—*Helodini*.

Form usually oval, sometimes oblong, surface always more or less pubescent. Head deflexed, usually more or less visible from above, rarely concealed by a hood like projection of the thorax, clypeal suture not visible. The prosternum is very short in front of the coxæ and is extremely narrow between them. The anterior coxæ are long, oblique, moderately prominent, received against the anterior portion of the mesosternum, and without trochantin. The posterior coxæ are at least moderately dilated internally and contiguous. The tibiæ are sulcate on their outer edge. The tarsi are of moderate length, the fourth joint bilobed and always larger than the third and the claws are simple.

The labial palpi in all the genera except *Cyphon* have the third joint inserted at the side of the second. The tarsi also exhibit two forms, in one of which the upper side is bicarinate continuing the structure of the edge of the tibia, in the other the upper side is simply convex. The posterior tibial spurs exhibit a great variation in length, being very small in most of the species but elongate in *Scirtes*.

The under side of the head has a strongly marked subocular ridge

similar to that to which I have already called attention in some Tachyporini, but still more strongly marked. In *Helodes* and *Scirtes* (except one species), this ridge is absent.

Scirtes is remarkable for the dilated hind femora giving the species a saltatorial power. In some *Helodes* the femora are somewhat thickened and approach the structure of *Scirtes*.

The genera have had but one addition since the publication of the "Classification," namely, *Microcara*, the validity of which is denied by some authors, but its characters give it more claim to be separated from *Helodes* than do those of *Prionocyphon*.

Our genera are separated in the following manner :

- Third joint of labial palpi arising from the side of the second. (Pl. I, fig. 17).
 Posterior femora normal, tibial spurs moderate.
 First joint of antennæ expanded, posterior tarsi flat above and bicarinate.
 (Pl. I, fig. 12)..... **Prionocyphon**.
 First joint of antennæ not expanded.
 Posterior tarsi convex above, not carinate, the third joint normally visible..... **Microcara**.
 Posterior tarsi flat and bicarinate above, the third joint in great part concealed by the prolongation of the upper edge of second joint.
 (Pl. I, fig. 14)..... **Helodes**.
 Posterior femora broad, saltatorial, the spurs of posterior tibiæ long.
 (Pl. I, fig. 15)..... **Scirtes**.
 Third joint of labial palpi arising from the end of the second. Tarsi convex above not carinate **Cyphon**.

The above genera are all represented in the Atlantic region, *Cyphon* and *Helodes* alone in the Pacific, although Motschulsky describes one *Scirtes* from California. *Helodes* as above defined includes *Sacodes* Lec.

PRIONOCYPHON Redt.

Head deflexed, front without suture, a well defined subocular ridge. Eyes round, moderately prominent. Antennæ slender, longer than half the body, first joint oval, explanate in front, second and third joints very small, the latter especially so, fourth joint a little shorter than the first, fifth a little shorter than fourth. 6—11 subequal, similar to the fourth, in the male of one species a double row of appendages arises from the base of joints 4—10. Mentum nearly square, ligula transverse, emarginate in front, the angles rounded. Labial palpi with second joint long, the third arising at a right angle from its middle. Maxillary palpi longer, last joint oval, subacute at tip. Prosternum in front of coxæ very short, prolonged in a slender plate between and extending behind them (the tip is variable in the two

species), meeting the mesosternum, the anterior coxæ prominent. Mesosternum horizontal in front, very narrowly separating the middle coxæ. Posterior coxæ suddenly dilated within forming an oval plate and contiguous at their inner margin. Legs moderate, tibiæ flattened on their outer edge and with distinct terminal spurs. Tarsi flattened above, first joint as long as the next three, 2—3—4 subequal, the latter broader and subbilobed, fifth moderate, the claws simple.

The affinities of this genus have already been sufficiently alluded to in the synoptic table.

Prosternum at tip remaining a vertical lamina the same as between the coxæ.

(Pl. I, fig. 11 b).

Males with joints 4—10 of antennæ bi-appendiculate.....**discoideus**.

Prosternum at tip dilated in the form of a spear-head. (Pl. I, fig. 11 a).

Males with simple antennæ.....**limbatus**.

P. discoideus Say.—Oval, slightly oblong, moderately convex, yellow, elytra with large discal black space of variable size, divided by the suture. Head sparsely punctate. Thorax short, transverse, very little narrowed in front, sides feebly arcuate, margin not explanate, apex and base bisinuate, disc moderately convex, sparsely punctulate. Elytra coarsely moderately densely punctate. Body beneath rather sparsely punctate. Length .12—.20 inch; 3—5 mm.

The males have two branches (not articulated), arising from the base of joints 4—10, these appendages rather longer than the joint and fimbriate. The females are larger and broader and have simple antennæ. In both sexes the antennæ are yellow. (Pl. I, fig. 12).

Occurs from Pennsylvania to Missouri and Georgia.

P. limbatus Lec.—This species in its form and superficial details resembles the preceding. It differs however in the male having simple antennæ, and in both sexes by the structure of the tip of the prosternum. The antennæ are black or piceous except the three basal joints. Length .15—.20 inch; 4—5 mm.

In *discoideus* the tip of the prosternum is a simple vertical lamina received in a narrow notch of the mesosternum. In this species the tip is dilated in the form of a narrow spear-head and lies upon the mesosternum.

Occurs from Pennsylvania to Georgia.

MICROCARA Thoms.

Head strongly deflexed, a well defined subocular carina, under side of head slightly concave. Antennæ a little longer than half the body, slender, filiform, first joint oval, second shorter, conical, third a little longer than second, 4—10 gradually but very feebly shorter, eleventh longer than the tenth. Labrum transverse. Front without suture.

Mentum transverse, ligula moderately prominent, feebly emarginate, labial palpi short, the second joint long, third inserted at a right angle at the middle of the second. Maxillary palpi moderately long, last joint more slender than the preceding and acute at tip. Prosternum very short before the coxæ, prolonged in a very thin lamina between them and a little dilated at tip behind and touching the mesosternum. Anterior coxæ conical, prominent, without trochantin. Mesosternum very short, not entirely separating the middle coxæ. Metasternum short, side pieces moderate, epimera concealed. Posterior coxæ suddenly dilated within in oval plates and contiguous at middle. Legs normal, tibiæ flattened on the outer side and without terminal spurs. Tarsi slightly dilated, shorter than the tibiæ, joints 1—3 gradually decreasing in length, fourth broader, subbilobed, fifth not elongated. Claws simple.

By the form of its tarsi this genus resembles *Cyphon*, from which it differs by the structure of the labial palpi. From the other genera it differs by the much shorter first joint of hind tarsi, which is here not flattened above as in all except *Scirtes*. This genus seems to me well founded and as fully entitled to recognition as either *Helodes* or *Cyphon*.

M. explanata Lec.—Elongate oval, brownish testaceous, sparsely pubescent. Thorax twice as wide as long, apex moderately arcuate, sides more strongly arcuate, base feebly bisinuate, hind angles rectangular, lateral margin rather broadly explanate and slightly reflexed, disc densely finely punctured. Elytra a little wider than the thorax and rather more than three times as long, surface densely punctured, more coarsely than the thorax. Body beneath moderately densely punctulate. Length .20—.22 inch; 5—5.5 mm.

Occurs in Canada and Michigan. Resembles the European *Helodes lurida*.

SCIRTES Illig.

Head deflexed, front without suture, beneath without lateral elevated line below the eyes, (except *orbiculatus*). Antennæ slender, half as long as the body. Eyes round, moderately prominent. Labrum short. Mentum quadrangular, ligula rounded in front, the third joint of the palpi inserted at the side of the second or at least very obliquely. Maxillary palpi moderate, last joint longer than the third, truncate at tip. Prosternum short, not prolonged between the coxæ which are prominent and contiguous without trochantin. Mesosternum narrow. Metasternum moderate, episterna rather broad, epimera concealed. Posterior coxæ suddenly dilated in a small plate within and contiguous. Anterior and middle legs normal, the tibiæ with moderate spurs, posterior femora oval, saltatorial, the tibiæ with one long and a shorter

spur. Tarsi with fourth joint bilobed, the first joint of the posterior as long as all the others. Claws simple.

The outer edge of the tibiæ is flattened and acutely limited each side. The labial palpi show a tendency to vary somewhat in structure. Usually the third joint is inserted at the middle of the side of the second, but in *Troberti* the second joint is rather stout, very obliquely truncate, and the third is inserted in the truncation. The head beneath has the subocular ridge in *orbiculatus* alone.

Our species as far as known are:

Head beneath without subocular ridge.

Color above uniformly piceous.....**tibialis.**

Color testaceous, elytra with short brown lines. (Pl. I, fig. 15)...**Troberti.**

Head beneath with subocular ridge.

Color of elytra piceous with common central red spot.....**orbiculatus.**

S. tibialis Guér.—Broadly oval, piceous or nearly black, moderately shining, sparsely pubescent. Head and thorax nearly smooth. Elytra moderately densely punctulate. Body beneath moderately densely punctulate. Femora piceous, tibiæ, tarsi, palpi and antennæ paler. Length .10—.14 inch; 2.5—3.5 mm.

Occurs in the more northern States and Canada, and very closely allied to the European *hemisphericus*.

S. Troberti Guér.—Broadly oval, moderately convex, brownish testaceous, very feebly pubescent. Head and thorax moderately densely punctate. Thorax brownish testaceous with paler spaces. Elytra more coarsely punctured than the thorax, pale testaceous with brownish longitudinal lines forming three irregular dentate bands, basal, median and subapical. Body beneath brownish testaceous, moderately densely punctulate. Length .20—.22 inch; 5—5.5 mm. (Pl. I, fig. 15).

Differs from our other species by the larger size and its coloration.

Occurs in Texas and Mexico.

S. orbiculatus Fab.—Broadly oval, black or piceous, moderately shining, sparsely pubescent. Head and thorax sparsely punctate. Elytra more coarsely punctured than the thorax. Body beneath moderately densely punctulate. Femora piceous, tibiæ, tarsi and antennæ pale. Length .10—.12 inch; 2.5—3 mm.

This species varies considerably in color giving rise to several synonyms, these are as follows:

orbiculatus Fab.—Sides of the thorax and common central spot of elytra reddish-yellow; *centralis* Say, *lateralis* Lec., *suturalis* Zieg.

suturalis Guér.—Thorax entirely piceous.

ruficollis Lec.—Thorax entirely yellow, elytra pale from immaturity but showing the common central spot.

Occurs from the Middle States to New Mexico.

The following remains unknown :

S. californicus Motsch.—Subovatus, convexus, nigro-castaneus, glaber, ore, antennis pedibusque anteriores testaceis, pedibus posteriores nigro-fuscis; femoribus incrassatis. Long. $1\frac{1}{2}$ lin.

Occurs in California.

HELODES Latr.

Head deflexed, usually concealed from above by the prolonged thorax, without frontal suture, beneath without subocular ridge. Eyes round, moderately prominent. Mouth parts as in *Microcara*. Antennæ slender. Prosternum very short before the coxæ and not prolonged between them, the coxæ prominent and contiguous. Middle coxæ moderately prominent and contiguous. Metasternum short. Posterior coxæ suddenly dilated within and contiguous at middle. Legs moderate. Tibiæ with distinct terminal spurs, the posterior margin flattened. Tarsi flattened and bicarinate above, first joint as long as the rest united, second less than half the first and prolonged above in two dentiform processes which nearly conceal the very small third joint beneath, fourth longer than the third and subbilobed, fifth rather short. Claws simple. (Pl. I, fig. 14).

In most of the species of this genus the thorax is prolonged in front as in *Sacium*, and entirely conceals the head. The structure of the tarsi distinguishes it from all the other genera of the tribe.

Our species are as follows:

Form oblong, more than twice as wide as long.

Thorax subtruncate in front, the margin not reflexed.....**apicalis.**

Thorax prolonged in front, nearly semicircular in outline, the apical margin slightly reflexed **maculicollis.**

Form oval or broadly ovate. Thorax prolonged in front.

Oval, longer than broad.

Elytra yellow with two black spots on each.....**pulchella.**

Elytra entirely black.....**fuscipennis.**

Broadly ovate, nearly as broad as long.

Elytra entirely black.....**thoracica.**

The species all agree in the structure of the antennæ. The first joint is oval, second round scarcely as large as half the first, third minute, fourth as long as the preceding three, 5—11 equal, a little shorter than the fourth. The posterior femora are stouter than in *Cyphon* or *Microcara* but not saltatorial as in *Scirtes*, although the present genus is a very natural intermediate between the two former and the latter, not only in this character but also in the presence of tibial spurs of moderate size. Guérin also mentions the intermediate

character of the above species as far as they were known to him. (Spec. et Icon. fasc. 3, No. 9, p. 14).

The first two species in the above table are more closely allied to the *pallida* of Europe than the others.

Among the European species of *Helodes* and *Microcara*, Tournier has observed in some of the males an emargination of the last ventral segment, with small foveæ on one or both of the last two segments.

H. apicalis Lec.—Form oblong, finely pubescent, color variable. Head moderately densely punctate. Thorax twice as wide as long, narrower in front, apex very feebly arcuate, sides more strongly, base feebly bisinuate, hind angles obtuse, anterior angles rounded, margin narrowly reflexed, disc moderately convex, moderately punctate. Elytra more densely and coarsely punctured than the thorax. Body beneath finely and densely punctured. Length .16—.20 inch; 4—5 mm.

The color is variable. In the type the color above is luteous, the tip of the elytra and a small apical spot on the thorax piceous, beneath piceous with pale legs. In other specimens the thorax is entirely yellow. A specimen in my cabinet has the thorax yellow and the elytra black, another in the cabinet of Dr. Leconte is totally piceous.

There is a slight trace of a post-scutellar depression of the elytra in all the specimens, and in one a vague tendency to become subtricostate.

Occurs in California from San Francisco northward.

H. maculicollis n. sp.—Form oblong, very finely pubescent, color black, thorax broadly yellow at the sides. Head punctate. Thorax semicircular, apical and lateral margins slightly reflexed, disc moderately convex, not densely punctate. Elytra more coarsely and densely punctured than the thorax. Body beneath rather finely, moderately densely punctulate. Length .16—.18 inch; 4—4.5 mm.

One specimen before me has the abdomen pale, the other piceous. This species is closely related to the preceding in form and sculpture, but differs in having the thorax truly semicircular and the head not at all visible from above.

Canada, New Hampshire and Pennsylvania.

H. pulchella Guér.—Form elliptical, finely pubescent, yellow, elytra each with an oval, basal, piceous spot and another much larger posteriorly two-thirds the length of the elytra. Thorax semicircular, base bisinuate, entire margin slightly reflexed, disc sparsely finely punctate. Elytra moderately densely punctured. Body beneath yellow, abdomen at sides often infusate, surface sparsely punctate and pubescent. Length .12—.20 inch; 3—5 mm.

The last ventral of the male is emarginate at tip, in the female simple. The two elytral spots may coalesce and form a continuous vitta.

Occurs from Pennsylvania to Texas.

H. fuscipennis Guér.—Form of *pulchella*, color yellow, elytra piceous or black. Length .18—.20 inch; 4.5—5 mm.

The elytra are a little more densely punctured than in *pulchella* and the pubescence somewhat more abundant. The under side is usually entirely yellow, but a specimen in Dr. Leconte's cabinet has the under side and legs entirely piceous, also two spots on the thorax. While it differs so decidedly in color I am unwilling to consider it distinct.

Occurs from Pennsylvania to Texas. Females only seen.

H. thoracica Guér.—Broadly oval, nearly as broad as long, black, thorax and antennæ yellow. Thorax as in *pulchella*. Elytra not densely punctured. Body beneath and legs black. Abdomen sparsely, rather coarsely punctate. Femora piceous, tibiæ and tarsi paler. Length .10—.14 inch; 2.5—3.5 mm.

The last ventral of the male is emarginate.

Occurs from Canada to Georgia.

CYPHON Payk.

This genus is so very closely allied to *Helodes* as to have been united with it by nearly all authors excepting the more recent. Possessing all the generic characters of *Helodes*, *Cyphon* differs in the form of the labial palpi in which the last joint arises from the end and not from the side of the preceding. As extended comparisons are already given of the genera any further repetition here is unnecessary.

The species are not numerous but present difficulties in their study from the flexibility of many of the usual specific characters. The following table will be found of considerable assistance while many of the difficulties will be noticed under the species themselves.

Joints 2—3 of antennæ short, their conjoined length usually less than that of the fourth.

Thorax in front arcuate, prolonged slightly over the head, the margin reflexed. Joints 2—3 equal to four.....**robustus.**

Thorax truncate in front, not prolonged nor reflexed.

Form oblong, subparallel.

Joint three very short, shorter than second.....**ruficollis.**

Joint three as long as the second.

Sides of thorax explanate.....**brevicollis.**

Sides of thorax not explanate.....**exiguus.**

Form oval, moderately robust, margin of thorax not explanate.

Entirely piceous, form regularly oval.....**obscurus.**

Elytra with large discal spot red, form slightly oblong.....**concinuus.**

Joints 2—3 of antennæ very little shorter separately than the fourth, together always longer than the fourth, the third a little longer and more slender than the second.

Sides of thorax very distinctly explanate, species bicolored, thorax reddish-yellow, elytra piceous or black.....**collaris.**

Sides of thorax not or very feebly explanate, body above uniform in color but variable from piceous to testaceous.

Thorax more densely punctured at the sides than at middle.

Form regularly oval. Elytra ♀ not impressed.....**variabilis.**

Form oblong. Elytra ♀ bi-impressed.....**impressus.**

Thorax not more densely punctured at the sides.

Form oval, moderately convex.....**padi.**

C. robustus Lec.—Oblong oval, brownish, moderately shining, sparsely clothed with short, suberect pubescence. Head moderately punctate. Antennæ as long as half the body, piceous, three basal joints paler, joints 2—3 small, equal in length, the third a little more slender, the two together nearly equal to the fourth. Thorax a little more than twice as wide as long, when viewed from above nearly semicircular, apical margin concealing the head, lateral margins explanate and slightly reflexed, disc sparsely, sides a little more densely punctate. Elytra not wider at base than the thorax, sides moderately arcuate broader at middle, disc rather coarsely and moderately densely punctured, a vague sutural stria and three feeble traces of costæ. Sides of metasternum densely punctulate. Abdomen densely and finely punctulate over its entire surface. Length .20 inch; 5 mm.

This species bears a certain resemblance to *Microcara explanata*, but is easily known by its generic characters.

New York, Mr. Ulke.

C. ruficollis Say.—Oblong oval, piceous, thorax variable in color from red to piceous, surface finely pubescent. Head scarcely punctate. Antennæ piceous, three basal joints pale, joints 2—3 short, scarcely longer than half the fourth, the third much smaller than the second. Thorax nearly three times as wide as long, slightly narrowed in front, sides moderately arcuate, apex feebly emarginate, base bisinuate, margin very feebly explanate, surface sparsely punctate and a little more coarsely near the sides. Elytra a little wider than the thorax, coarsely and moderately densely punctured, form oblong, sides parallel. Body beneath finely, moderately densely punctured. Length .14—.16 inch; 3.5—4 mm.

The thorax varies in color from rufous to piceous, the intermediate forms having the middle more or less piceous while the sides are more or less broadly rufous.

Occurs from New York to Georgia and Kansas.

C. brevicollis Lec.—Oblong oval, brownish testaceous, sparsely clothed with yellowish, silken pubescence. Head not densely punctate, a vague impression each side above the base of the antennæ. The latter a little longer than half the body, second and third joints small, about equal in length, the third a little more slender, the two together shorter than the fourth. Thorax nearly three times as wide as long, slightly narrowed in front, sides feebly

arcuate, apical and basal angles obtuse, apex emarginate, base bisinuate, disc moderately convex, margin explanate, surface very sparsely finely punctured at middle, at sides coarsely and moderately densely. Elytra a little wider than the thorax, oblong, nearly parallel, disc vaguely tricostrate, surface coarsely but not densely punctured. Body beneath moderately densely punctate. Length .16—.18 inch; 4—4.5 mm.

The antennæ are piceous the three basal joints pale. The elytral punctures have a deceptive appearance of being transversely confluent, those at tip are however always finer and much less dense. Specimens occur with the body beneath and thorax piceous, another in Dr. Leconte's cabinet is black with the thorax red, and others are entirely pale luteous.

Occurs from Oregon to California.

C. exiguus n. sp.—Oblong oval, piceous, thorax sometimes rufous, surface sparsely pubescent. Head nearly smooth. Antennæ as long as half the body, joints 2—3 small, together equal to the fourth, the third as long as but more slender than the second. Thorax nearly three times as wide as long, scarcely narrowed in front, sides very feebly arcuate, margin not explanate, apex truncate, base feebly bisinuate, surface finely and sparsely punctate. Elytra a little wider than the thorax, oblong, parallel, rather finely not densely punctate. Body beneath finely sparsely punctate. Length .12 inch; 3 mm.

Resembles *ruficollis* but is smaller, the sides of the thorax not explanate and the two joints of the antennæ above noted longer.

Occurs in the Mariposa region of California.

C. concinnus Lec.—Oblong oval, black, elytra with large discal, sub-basal red space, moderately shining, sparsely finely pubescent. Head very sparsely, rather finely punctate. Antennæ half as long as the body, black, three basal joints paler, joints 2—3 small, equal in length, third a little more slender, the two together a little shorter than the fourth. Thorax nearly three times as wide as long, apex slightly emarginate, sides feebly arcuate, anterior angles distinct, side margin gradually declivous, not explanate nor reflexed, surface sparsely punctate. Elytra wider at middle than the thorax, moderately densely punctate, and very vaguely costate. Sides of metasternum and first three abdominal segments coarsely but sparsely punctured, last two segments very finely and sparsely punctured. Length .14—.16 inch; 3.5—4 mm.

An easily known species by its coloration, but specimens sometimes occur entirely testaceous.

Occurs near San Francisco, California, and western Nevada.

C. obscurus Guér.—Ovate, moderately convex, sparsely pubescent, black, shining, antennæ and legs usually entirely pale. Head smooth. Antennæ pale yellow with the terminal joints sometimes darker, structure as in *concinnus*. Thorax as in *concinnus*, surface sparsely punctulate. Elytra not densely punctate, surface very vaguely tricostrate. Sides of metathorax and abdomen moderately coarsely, not very densely punctate, last ventral segment smoother. Length .12—.14 inch; 3—3.5 mm.

The color of the legs varies, they are usually yellow but the femora are often darker, even piceous. On the elytra the faint costæ are sometimes absent.

This species has been known as *pallipes* Lec., but I have no doubt of the identity of this and *obscurus*.

Occurs from Canada to Georgia.

C. collaris Guér.—Oval, slightly oblong, piceous black, shining, head in front, thorax, base of antennæ and legs partly, reddish-yellow. Front sparsely and finely punctate, occiput piceous more densely punctured. Antennæ half the length of the body, piceous, basal joints pale, third joint a little longer than the second and as broad, these two together a little longer than the fourth. Thorax nearly three times as wide as long, slightly narrowed toward the front, anterior angles rounded, posterior rectangular, sides distinctly explanate, especially near the posterior angles, surface very sparsely and indistinctly punctate and finely pubescent. Scutellum rufous. Elytra a little wider than the thorax, sides gradually arcuate, disc moderately convex, suture not thickened, surface rather coarsely and moderately densely punctate and finely pubescent. Body beneath sparsely and moderately coarsely punctate. Legs variable in color from entirely piceous to pale. Length .14—.16 inch; 3.5—4 mm.

Male.—Elytra without impressions, fourth ventral with a vague concavity at its middle.

Female.—Disc of elytra with a post-scutellar flattened or slightly depressed space of irregularly oval form, divided by the suture, the punctuation in this region being almost obsolete; sides of elytra at middle with a smaller but deeper impression also feebly punctate.

This species resembles some of the forms of *ruficollis*, but differs in the structure of the antennæ and otherwise.

Occurs from Massachusetts to Georgia. The females seem to be very rare.

C. variabilis Thunb.—Form oval, slightly oblong, moderately convex, pubescent, color variable from piceous to pale brown or testaceous. Head moderately densely punctured but somewhat variable in its fineness. Antennæ a little longer than half the body, the outer joints usually darker. Thorax twice as wide as long, apex and base bisinuate, sides moderately arcuate, margin not explanate, disc moderately convex, surface sparsely punctured at middle, more densely and coarsely at the sides but variable in degree. Elytra a little wider than the thorax, about a fourth or a third longer than wide, sides regularly arcuate, disc moderately convex, subsutural costa moderately well marked, surface moderately densely punctured, the punctures rather fine and becoming less distinct toward the tip. Body beneath usually darker than above, abdomen finely alutaceous. Legs variable in color. Length .08—.14 inch; 2—3.5 mm.

As the name justly indicates, this species is very variable in many respects, the most important being size, color and punctuation.

The variation in size is probably the least important character,

as the limit observed in our fauna is entirely within the usually expected or at least allowable extent, but the smaller forms are generally less distinctly sculptured and the sutural ridge of the elytra less marked.

In color the variation is from piceous to testaceous through all intermediate shades, the larger and better developed specimens are as a rule the darker colored. In the form known as *nebulosus* in our fauna, the sides of the elytra as well as the suture are darker than the disc, so that a coloration is seen resembling the well known varieties of *padi*. From the latter the punctuation of the sides of the thorax will always distinguish any of the forms of *variabilis*.

The punctuation of the entire surface is also somewhat variable as mentioned above regarding the smaller specimens. Independently of this the punctuation of the head and thorax vary in degree, so that the front and the side of the thorax from an ordinarily dense punctuation come to have a rugose and even granular aspect.

There do not appear to be any clearly dividing lines between any of the forms above observed, the one merging so gradually into the other as to leave no doubt as to the specific identity of all. No sexual differences have been observed.

In determining the specific identity of our species with that of Europe, comparison has been made with carefully named specimens sent by my friend Mr. A. Sallé of Paris, while the synonymy as far as our fauna is concerned, is the result of a study of a far greater mass of material than that used in our latest synopsis twenty-six years ago.

Closely allied to *variabilis* is *coarctata* also European, but said by Guérin to occur in our fauna. I have never seen any specimens at all resembling those sent me by Mr. Sallé. It is possible that the species may yet be found here, when it will be known by its general resemblance to *variabilis* with the elytra sub-tricostate as in *obscurus*.

The distribution of this species in our fauna is very wide, extending from the Hudson's Bay region to Florida and Texas, and in the west to Vancouver.

C. padi Linn.—Ovate, moderately convex, finely pubescent, piceous or black, elytra with the tip pale yellow, the spot sometimes well defined, often extending forward in an irregular vitta. Head densely punctate. Antennæ half the length of the body, piceous, the basal joints pale. Thorax more than twice as wide as long, slightly narrowed in front, sides feebly arcuate, surface very sparsely and finely punctulate even at the sides. Elytra wider than the

thorax at base, form regularly oval, moderately convex, subsutural costa very feeble, surface moderately densely punctate and very sparsely pubescent. Body beneath usually dark in color but variable, abdomen sparsely punctate and alutaceous. Legs variable, femora piceous, tibiæ pale. Length .08 inch; 2 mm.

This species varies in color but is known by its comparatively smooth thorax. The fully colored specimens are entirely piceous above and beneath, except the tip of the elytra which has a well limited pale yellow spot. As the specimens become generally paler the spot extends forward in an irregular vitta as in certain forms of *variabilis*. I have never seen any pale testaceous forms of this species, unless several small specimens of otherwise doubtful nature be referred here which I have seen from Florida.

Occurs from Massachusetts to Indiana.

C. impressus Lec.—Oblong oval, slightly broader behind the middle, feebly convex, rufo-piceous, pubescent. Head densely punctulate. Antennæ half the length of body, pale. Thorax twice as wide as long, slightly narrowed in front, apex and base bisinuate, sides feebly arcuate, margin not explanate, surface densely punctured, even more so at the sides. Elytra scarcely wider at base than the thorax and broader behind the middle, sides feebly arcuate, disc subdepressed, subsutural costa moderately well marked, surface less densely punctured than the thorax but near the base a little more coarsely, near the apex more finely and sparsely. Body beneath sparsely punctulate and alutaceous. Legs pale. Length nearly .10 inch; 2.5 mm.

Of this species two females only are known to me. They have on the disc of the elytra, a short distance behind the scutellum, an arcuate shallow impression which crosses the suture, on each elytron about one-third from the apex is a deeper impression placed obliquely, the two converging posteriorly toward the suture approaching it very closely.

There is no species in our fauna with the thorax as densely punctured as this one.

Occurs at Tampa, Florida.

Tribe V.—*Placonychini*.

Front narrow, antennæ closely inserted. Anterior coxæ without trochantin. Tarsi slender, claws with slender membranous lobes arising from the base. (Pl. I, fig. 16 c).

In these few words a tribe is suggested containing a single species possessing the oral organs of the Eubriini, a prosternum approaching the *Helodini* with a structure of tarsal claw entirely unique in the family.

The genus is characterized as follows:

PLACONYCHIA n. g.

Head as in *Ectopria*. Eyes equal in the two sexes. Antennæ pectinate ♂, serrate ♀, very like *Ectopria*. Ligula with four processes, shorter and less slender than in that genus. Palpi similar to *Ectopria*. Prosternum short in front of the coxæ, prolonged narrowly between them and not elevated. Anterior coxæ moderately prominent, higher than the prosternum and without trochantin. Mesosternum of moderate width, depressed and oblique. Posterior coxæ suddenly but moderately dilated internally and contiguous, very narrow externally. Legs as in *Ectopria*. Tarsi slender, not lobed nor dilated, joints 1—4 gradually decreasing in length, fifth a little longer than the first and with a distinct bisetose onychium. Claws slender and simple at tip, moderately dilated at base, and with a slender membranous appendage arising from the base nearly as long as the claw.

This genus has the narrow front of the Eubriini and a general similarity of structure otherwise, but the form of prosternum approaches the Helodini. The claws are however entirely anomalous in the family, the presence of the membranous lobes being a very disturbing element. The thorax by its explanate and rather widely reflexed border recalls the form seen in certain *Telephori*, with which the genus has no affinity.

P. Edwardsii Lec.—Broadly oval, feebly convex, piceous, elytra luteous ♂, piceous ♀, sparsely finely pubescent. Thorax twice as wide as long, narrower in front, apex arcuate, slightly prolonged over the head and with slightly reflexed edge, base bisinuate, sides moderately arcuate, margin explanate and rather broadly reflexed, color piceous, anterior angles pale, translucent, hind angles broadly rounded, disc moderately convex at middle, shining, very sparsely punctulate. Scutellum moderate in size, obtuse at tip. Elytra broadly oval, with vague grooves irregularly punctured, the intervals narrower than the grooves and very sparsely punctate. Body beneath piceous, opaque, sparsely pubescent. Legs testaceous, femora darker. Length .14 ♂—.20 ♀; 3.5—5 mm. (Pl. I, fig. 16).

Male.—Elytra luteous. Antennæ pectinate, a little longer than half the body, first joint short, oval, second very short, transverse, joints 3—10 gradually longer, each bearing a process anteriorly which arises from the base of the third, the middle of the fourth, subapical in the fifth and apical in the others, eleventh joint twice as long as the tenth and slightly curved. (Pl. I, fig. 16).

Female.—Elytra piceous. Antennæ not as long as half the body. Joints 1—2 as in the male, third elongate triangular, nearly as long as the next two together, 4—10 triangular, broader than long, eleventh oval, obliquely emarginate and with the tip acute. (Pl. I, fig. 16 a).

The females are rare and occur in the proportion of one to ten of the males.

Occurs in California, at and north of Santa Barbara, (H. Edwards).

Bibliography and Synonymy.

MACROPOGON Motsch.

- M. testaceipennis** Motsch. Bull. Mosc. 1859, iv, p. 362, pl. 4, fig. 19 a.
M. piceus Lec. Proc. Acad. 1861, p. 349.
M. rufipes Horn, n. sp.

EURYPOGON Motsch.

- E. niger** Mels. (*Ochina*), Proc. Acad. ii, p. 309; Motsch. loc. cit. p. 363, pl. 4, fig. 19 b.
Harrisii Westw. (*Sclerodes*), Rev. Zool. 1862, p. 374, pl. 16, fig. 1—8.
E. californicus Horn, n. sp.

ALLOPOGON n. g.

- A. villosus** Horn, n. sp.

STENOCOLUS Lec.

- S. scutellaris** Lec. Proc. Acad. 1853, p. 229.

DASCYLLUS Latr.

- D. Davidsoni** Lec. Proc. Acad. 1859, p. 283.
D. plumbeus Horn, n. sp.

ANORUS Lec.

- A. piceus** Lec. Proc. Acad. 1859, p. 87.

ODONTONYX Guér.

- O. trivittis** Germ. (*Dasytes*), Ins. Spec. nov. p. 76; Cast. Hist. Nat. i, p. 281.
ornatus Mels. (*Atopa*), Proc. Acad. 1845, p. 220; Guér. Spec. et Icon. fasc. 6, nr. 14, fig. 1—19.

ANCHYTARSUS Guér.

- A. bicolor** Mels. (*Atopa*), Proc. Acad. 1846, p. 221.
ater Guér. Spec. et Icon. fasc. 6, nr. 15, fig. 1—10.
fragilis Zieg. (*Elodes*), Proc. Acad. 1846, p. 269.

ANCHYCTEIS n. g.

- A. velutina** Horn, n. sp.

ARÆOPUS Lec.

- A. monachus** Lec. Trans. Am. Ent. Soc. 1874, p. 57.

PTILODACTYLA Latr.

- P. serricollis** Say, (*Ptilinus*), Journ. Acad. 1823, p. 186.
fusca Mels. (*Atopa*), Proc. Acad. 1846, p. 221.
elaterina Guér. Icon. Regn. Anim. p. 45, pl. 13, fig. 9; Cast. Hist. Nat. i, p. 758; Illig. Mag. vi, p. 347; *larva* Osten-Sacken, Proc. Ent. Soc. Phil. 1862, 109 et 115, pl. 1, fig. 3.
P. angustata Horn, n. sp.

EUCINETUS Germ.

- E. infumatus** Lec. Proc. Acad. 1853, p. 356.
E. oviformis Lec. New Species, 1865, p. 88.
E. testaceus Lec. loc. cit.
E. punctulatus Lec. Trans. Am. Ent. Soc. 1875, p. 172.
E. morio Lec. Proc. Acad. 1853, p. 357.

- E. terminalis** Lec. List Col. 1865, p. 50; Proc. Acad. 1853, p. 357, (description without name).
E. strigosus Lec. Trans. Am. Ent. Soc. 1875, p. 171.

ECTOPRIA Lec.

- E. nervosa** Mels. (*Eubria*), Proc. Acad. ii, p. 222, ♀; Lec. (*Eurea*), Proc. Acad. 1853, p. 352.
thoracica Zieg. (*Eubria*). Proc. Acad. ii, p. 269, ♂; Lec. (*Ectopria*), loc. cit. p. 351.
tarsalis Lec. loc. cit. p. 352, ♂.
tibialis Lec. loc. cit. p. 352, ♀.

DICRANOPSELAPHUS Guér.

- D. variegatus** Horn, n. sp.

ACNEUS n. g.

- A. quadrimaculatus** Horn, n. sp.

PRIONOCYPHON Redt.

- P. discoideus** Say, (*Cyphon*), Journ. Acad. v, p. 161; Guér. Spec. et Icon. fasc. iii, nr. 9, fig. 19; Lec. Proc. Acad. vi, p. 353.
P. limbatus Lec. New Species, 1865, p. 87.

MICROCARA Thoms.

- M. explanata** Lec. (*Helodes*), New Species, 1865, p. 87.

SCIRTES Illig.

- S. orbiculatus** Fab. (*Cyphon*), Syst. El. i, p. 503; Guér. Spec. et Icon. fasc. i, nr. 3, p. 6.
centralis Say, (*Altica*), Journ. Acad. iv, p. 88.
suturalis Guér. loc. cit. p. 8.
suturalis Zieg. Proc. Acad. ii, p. 44.
lateralis Lec. Proc. Acad. 1853, p. 356.
ruficollis Lec. Trans. Am. Ent. Soc. 1868, p. 53.
S. tibialis Guér. loc. cit. p. 3.
solstitialis Mels. Proc. Acad. ii, p. 223.
S. Troberti Guér. Rev. Zool. 1861, p. 545.
S. californicus Motsch. Bull. Mosc. 1845, i, p. 35, (*unknown*).

HELODES Latr.

- H. apicalis** Lec. New Species, 1865, p. 87.
H. maculicollis Horn, n. sp.
H. pulchella Guér. Spec. et Icon. fasc. iii, nr. 9, p. 13; Lec. (*Sacodes*), Proc. Acad. vi, p. 356.
H. fuscipennis Guér. loc. cit. p. 9; Lec. loc. cit.
thoracicus Mels. (*Nycteus*), Proc. Acad. ii, p. 222.
H. thoracica Guér. loc. cit. p. 14; Lec. loc. cit.

CYPHON Payk.

- C. robustus** Lec. Trans. Am. Ent. Soc. 1875, p. 171.
C. ruficollis Say, (*Lampyrus*), Journ. Acad. v, p. 162; Lec. Proc. Acad. vi, p. 353.
fragilis Zieg. (*Elodes*), Proc. Acad. ii, p. 269.
marginicollis Guér. (*Elodes*), Spec. et Icon. fasc. iii, nr. 9, p. 3, fig. 18.
oblongus Guér. (*Elodes*), loc. cit. p. 13.

- C. brevicollis** Lec. (*Helodes*), New Species, 1865, p. 88.
C. exiguus Horn, n. sp.
C. concinnus Lec. (*Helodes*), Proc. Acad. vi, p. 353.
C. obscurus Guér. (*Elodes*), loc. cit. p. 4.
pallipes Lec. Proc. Acad. vi, p. 354.
C. collaris Guér. (*Elodes*), loc. cit. p. 4, fig. 22; Lec. loc. cit. p. 355.
bicolor Lec. loc. cit. p. 355.
C. variabilis* Thunb. (*Cuntharis*), Mus. Ups. 4, 54; Guér. loc. cit. p. 4.
ovalis Say, Journ. Acad. 1825, p. 161.
fusciceps Kby. Fauna Bor. Am. p. 245; Lec. loc. cit. p. 354.
picca Lec. loc. cit.
punctata Lec. loc. cit.
nebulosa Lec. loc. cit. p. 355.
modesta Lec. loc. cit. The last four are described as *Helodes*.
C. padi* Linn. (*Chrysomela*), Syst. Nat. 2, p. 588; Guér. loc. cit. p. 7; Duval Gen. Col. Eur. iii, pl. 37, fig. 181.
pusilla Lec. (*Helodes*), loc. cit. p. 355.
C. impressus Lec. Proc. Amer. Philos. Soc. 1878, p. 405.

PLACONYCHA n. g.

- P. Edwardsii** Lec. (*Dicranopselaphus*), Trans. Am. Ent. Soc. 1874, p. 57.

EXPLANATION OF PLATE I.

- 1.—*Maeropogon piccus* Lec., 1 a, tarsus of same, 1 b, base of antenna of *M. testaceipennis* Motsch., 1 c, same of *M. rufipes* Horn.
- 2.—*Stenocolus scutellaris* Lec.
- 3.—*Anorus piccus* Lec., 3 a, hind tarsus.
- 4.—*Anchyteis velutina* ♂ Horn, 4 a, antenna of ♀, 4 b, hind tarsus.
- 5.—*Aræopus monachus* Lec., 5 a, tarsus, 5 b, head and thorax from front.
- 6.—Antenna of *Ptilodactyla serricollis* Say, 6 a, hind tarsus.
- 7.—Under side of *Eucinetus terminalis* Lec., 7 a, hind leg.
- 8.—*Ectopria nervosa* ♀ Mels., 8 a, 8 b, front of ♀ and ♂, 8 c, 8 d, two forms of male antenna, 8 e, antenna of ♀, 8 f, tarsus, 8 g, claw of ♂, 8 h, of ♀.
- 9.—Claws of *Eubria palustris* Germ., a, the anterior, b, posterior.
- 10.—*Acneus quadrimaculatus* Horn, 10 a, antenna ♀?, 10 b, tarsus, 10 c, claw.
- 11.—Thorax beneath of *Prionocyphon*, a, *limbatus*, b, *discoideus*.
- 12.—Antenna of ♂ *P. discoideus* Say.
- 13.—Claws of *Odontonyx trivittis* Germ.
- 14.—Posterior tarsi of *Helodes*.
- 15.—*Scirtes Troberti* Guér.
- 16.—*Placonycha Edwardsii* ♂ Lec., 16 a, antenna of ♀, 16 b, tibia and tarsus, 16 c, claws and appendages.
- 17.—Mentum, ligula and palpi of *Helodes*, (after Duval).

* In these two species the European synonymy is omitted as not pertinent to the present essay.